IN THE CLAIMS

1. (currently amended) In a method for producing a silicon-on-insulator structure including hydrogen implantation in a silicon wafer, chemical treatment of the wafer and a substrate, joining of the wafer and substrate, splicing and splitting of the wafer along a layer of the implanted hydrogen, the improvements wherein:

at least drying and removing of physically adsorbed substances from the surfaces of the wafer and substrate after the chemical treatment is carried out in a first ~~low~~ vacuum at a first moderate temperature such that the implanted hydrogen stays bound; and

at least one of the joining and splicing of the wafer and substrate and exfoliating along the layer of implanted hydrogen is carried out at a second ~~low~~ vacuum and a second moderate temperature the same as or slightly higher than the first moderate temperature such that the implanted hydrogen mostly stays bound.

2. (previously presented) The method according to claim1, characterized in that the hydrogen implantation is carried out through thermally grown oxide SiO_2 with a thickness of 5 to 50 nm.

3. (previously presented) The method according to claim 1,characterized in that the hydrogen implantation is carried out with H_2^+ or H^+ ions with doses from 1.5 to $15x10^{16}$ cm^{-2} and energies 20 to 200 keV, respectively.

4. (previously presented) The method according to claim 1, characterized in that a thermal annealing is carried out at 1100°C for 0.5 to1 hour after the splitting.

5. (previously presented) The method according to claim 1, further comprising thermal oxidation with following chemical etching with diluted hydrofluoric acid or a touch chemical-mechanical polishing (CMP) for removing an upper rough layer after the exfoliating.

6. (previously presented) The method according to claim1, characterized in that a thickness of thermally grown oxide SiO_2 on the substrate is 0.01 to 3 μm.

7. (previously presented) The method according to claim 1, characterized in that the substrate is glass with a thickness about 500 μm.

8. (previously presented)) The method according to claim 1, characterized in that the substrate is quartz with a thickness about 500 μm.

9. (currently amended) The method according to claim 1, wherein at least one of the first and second temperatures is 80 to 350°C for 0.1 to 100 hours and at least one of the first and second ~~low~~ vacuums is 10^1 to 10^4 Pa.

10. (currently amended) The method according to claim 1, wherein at least one of the first ~~low~~ vacuum or temperature is the same as the second ~~low~~ vacuum or temperature.

11. (currently amended) The method according to claim 9, wherein at least one of the first ~~low~~ vacuum or temperature is the same as the second ~~low~~ vacuum or temperature.